

09/936041

JG12 Rec'd PCT/PTO 07 SEP 2001  
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ichio YUDASAKA, Mitsutoshi MIYASAKA,  
Piero MIGLIORATO

Application No.: U.S. National Stage of PCT/GB01/00009

Filed: September 7, 2001

Docket No.: 110553

For: METHOD OF MANUFACTURING A THIN-FILM TRANSISTOR

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office  
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please replace claims 3, 7-9 and 11-13 as follows:

3. (Amended) A method of manufacturing a thin-film transistor according to Claim 1, characterized in that a process of introducing said impurity to said channel region is carried out by injecting the impurity from a surface side of said channel region.
7. (Amended) A method of manufacturing a thin-film transistor according to Claim 3, characterized in that an average projected range of the impurity in said process of introducing an impurity is from the center in the direction of thickness of said channel region to an interface between the channel region and the gate insulating film.
8. (Amended) A method of manufacturing a thin-film transistor according to Claim 3, characterized in that an average projected range of the impurity in said process of introducing

an impurity is from the center in the direction of thickness of said channel region to an interface between the channel region and a layer located on said substrate side.

9. (Amended) A method of manufacturing a thin-film transistor according Claim 1, characterized in that a process of introducing said impurity to said channel region is carried out by impurity diffusion from an impurity diffusion source arranged at a lower layer side of said channel region.

11. (Amended) A method of manufacturing a thin-film transistor according to Claim 4, characterized in that said crystallization process is laser annealing on a semiconductor film so as to form said channel region.

12. (Amended) A method of manufacturing a thin-film transistor according to Claim 1, characterized in that each process carried out after introducing said impurities to said channel region is carried out at a temperature below 400°C.

13. (Amended) A method of manufacturing a thin-film transistor according Claim 1, characterized in that each process carried out after introducing said impurities to said channel region is carried out at a temperature below 300°C.

REMARKS

Claims 1-13 are pending. By this Preliminary Amendment, claims 3, 7-9 and 11-13 are amended to eliminate multiple dependencies. Prompt and favorable examination on the merits is respectfully requested.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

Respectfully submitted,



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JAO:EDM/cmm

Attachment:  
Appendix

Date: September 7, 2001

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## APPENDIX

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## Changes to Claims:

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The following are marked-up versions of the amended claims:

3. (Amended) A method of manufacturing a thin-film transistor according to Claim 1 ~~or Claim 2~~, characterized in that a process of introducing said impurity to said channel region is carried out by injecting the impurity from a surface side of said channel region.

7. (Amended) A method of manufacturing a thin-film transistor according to ~~any of Claims 3 to 6~~, Claim 3, characterized in that an average projected range of the impurity in said process of introducing an impurity is from the center in the direction of thickness of said channel region to an interface between the channel region and the gate insulating film.

8. (Amended) A method of manufacturing a thin-film transistor according to ~~any of Claims 3 to 6~~, Claim 3, characterized in that an average projected range of the impurity in said process of introducing an impurity is from the center in the direction of thickness of said channel region to an interface between the channel region and a layer located on said substrate side.

9. (Amended) A method of manufacturing a thin-film transistor according Claim 1 ~~or Claim 2~~, characterized in that a process of introducing said impurity to said channel region is carried out by impurity diffusion from an impurity diffusion source arranged at a lower layer side of said channel region.

11. (Amended) A method of manufacturing a thin-film transistor according to Claim 4, ~~Claim 5 or Claim 10~~, characterized in that said crystallization process is laser annealing on a semiconductor film so as to form said channel region.

12. (Amended) A method of manufacturing a thin-film transistor according to Claim 1 ~~or Claim 11~~, characterized in that each process carried out after introducing said impurities to said channel region is carried out at a temperature below 400°C.

13. (Amended) A method of manufacturing a thin-film transistor according Claim 1 or ~~Claim 11~~, characterized in that each process carried out after introducing said impurities to said channel region is carried out at a temperature below 300°C.

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